



VOL 7 NO 1

JAN-MAR 2004

NAVAL MEDICAL SURVEILLANCE REPORT

NMSR

Table of Contents

From the Population Health Director	2
Coast Guard Yard Blood Lead Levels	3
Update: Cutaneous Leishmaniasis in U.S. Military Personnel - Southwest/Central Asia, 2002-2004	5
2003 Reportable Medical Event Trends, Navy and Marine Corps	7
Tobacco Cessation Efforts In The Navy, 2003 Report	10
Naval Disease Reporting System (NDRS)	12
Navy and Marine Corps Post-Deployment Health Assessments: Trending of The First Fifteen Months.....	15
Ambulatory Injuries for US Marine Corps Enlisted Personnel (CY 1998-2002)	20
Vaccine Adverse Event Reporting System (VAERS) Update	23

From the Population Health Director

CAPT Bruce K. Bohnker, MC, USN (FS)

The annual NEHC Workshop is completed and Population Health (PH) is working on multiple preventive medicine topics. We are busy planning for the NEHC workshop next spring, which will have a more formal process for abstract submission and review. We released the messages on individual award winners and awards for Command Health Promotion excellence. We released preventive medicine messages for ephedra, leishmaniasis, West Nile Virus surveillance, and post-deployment health to provide more information to Fleet personnel. Our NEHC PH website has copies of these messages for your review, as well as other messages of interest to operational personnel. The PH staff is working to put together their presentations and posters for the US Army Force Health Protection Conference in Albuquerque, NM, in August. We have a number of presentations accepted and look forward to that meeting. More information is available on the CHPPM website. We also look forward to hosting the Navy Epidemiology Board in early June 2004 in Portsmouth.

CAPT McGinnis retired on 09 April 2004 and is already sorely missed. We do wish him the best in his new career. His ceremony was the first of many retirements coming up for me, with my own ceremony likely in a year or so. We have also seen HM2 Bowman move over to Plans and Operations to provide support there. The summer will see the transfer of CDR Malakooti to NEP-MU2, replaced by CDR Lamar coming from NEP-MU2.

NEHC has undergone a small command reorganization, with PH now falling into the Readiness Support Team (RST) under CAPT Chris Rennix as our Executive Director. We expect to have a visit by the BUMED IG in June 2004.

The biggest project for the PH staff has been "Get Moving Navy" which has continued to build in importance and visibility. We have been busy with briefings to Navy Exchange Command, Navy Mid-Atlantic Region, and Commander Fleet Forces Command, all of whom have expressed deep interest in the topic. We have also briefed the BUMED flag ESC on our program. We are planning for the kick-off at the NAS Oceana Healthfest on 19 May 2004, which promises to be an exciting day. We have also been working to implement the BUMED population health program, with establishment of a Population Health Advisory Board and briefings to BUMED. Population Health Navigator has come on line and should be available to Military Treatment Facilities (MTFs), with CDR Lamar and LCDR Von Thun available for assistance.

NEHC has two FDPMUs deployed to Iraq, and another deployed to Haiti and we continue to be concerned with their safety as they provide Force Health Protection. We salute those personnel as they serve distant to family and friends.

Executive Editor: CAPT B. Bohnker, MC, USN(FS)
 Editors: Ms. A. Riegodedios, MSPH
 CDR M. Malakooti, MC, USN
 Wendi Suesz, MPH
 Assistant Editor Ms. N. D. Branch

Submissions and inquiries regarding content or material to be considered for publication should be directed to the Editor, Naval Medical Surveillance Report, Navy Environmental Health Center, Population Health Directorate, 620 John Paul Jones Circle Suite 1100, Portsmouth, VA 23708-2103. Guidelines for submissions are located at <http://www-nehc.med.navy.mil/prevmed/epi/nmsrpage.htm> or e-mail epi@nehc.med.navy.mil. To be added to the mailing list, contact the Navy Environmental Health Center at DSN 377-0702 Comm: (757) 953-0702.

POPHEALTH POC: CAPT B. Bohnker: (757) 953-0710, Ms. N. D. Branch: (757) 953-0702

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Coast Guard Yard Blood Lead Levels

LCDR, Francis Hall, MC, USNR, Uniformed Services University of the Health Science,
Bethesda, MD

Background

The United States Coast Guard (USCG) operates a ship repair and renovation facility in Baltimore, Maryland. Shipyards historically represent high-risks for occupational exposures, especially lead. The Occupational Safety and Health Administration (OSHA) sets guidelines for worker safety.

The USCG Yard Procedures Manual 5100.1C sets a more stringent policy for governing worker's safety in the yard.¹ Per this policy, environmental and biological intervention is initiated when paint-lead ships, in the Yard for repair, are determined to be a potential hazard to workers. Environmental monitoring occurs in spaces covered with lead paint where paint removal or welding operations will take place. Biological monitoring is required for all individuals conducting these operations (those at high-risk of exposure) and is encouraged for all hands working in other areas of the ship (those at low-risk of exposure). Typically, a blood lead level (BLL) is drawn before operations begin, every six months while working on the project, and at the completion of the project.¹ Intervention occurs when BLLs reach a threshold of 10 $\mu\text{g}/\text{dl}$. Employees found to have a BLL greater than 10 $\mu\text{g}/\text{dl}$ receive a complete medical assessment including an additional BLL, questions as to personal protective equipment (PPE) use, home exposures, recreational exposures, and counseling and training.

Over the past 15 years, various changes in engineering methods and use of PPE should have reduced workers' lead exposure risk. A previous study, comparing environmental lead levels in 1991 to those in 2002/2003 for the USCG Yard, suggests that environmental risk has decreased over time with changes in welding and paint removal techniques.² This is a follow-up study to look at BLLs in high-risk exposure groups and low-risk exposure groups over that same time period.

Methods

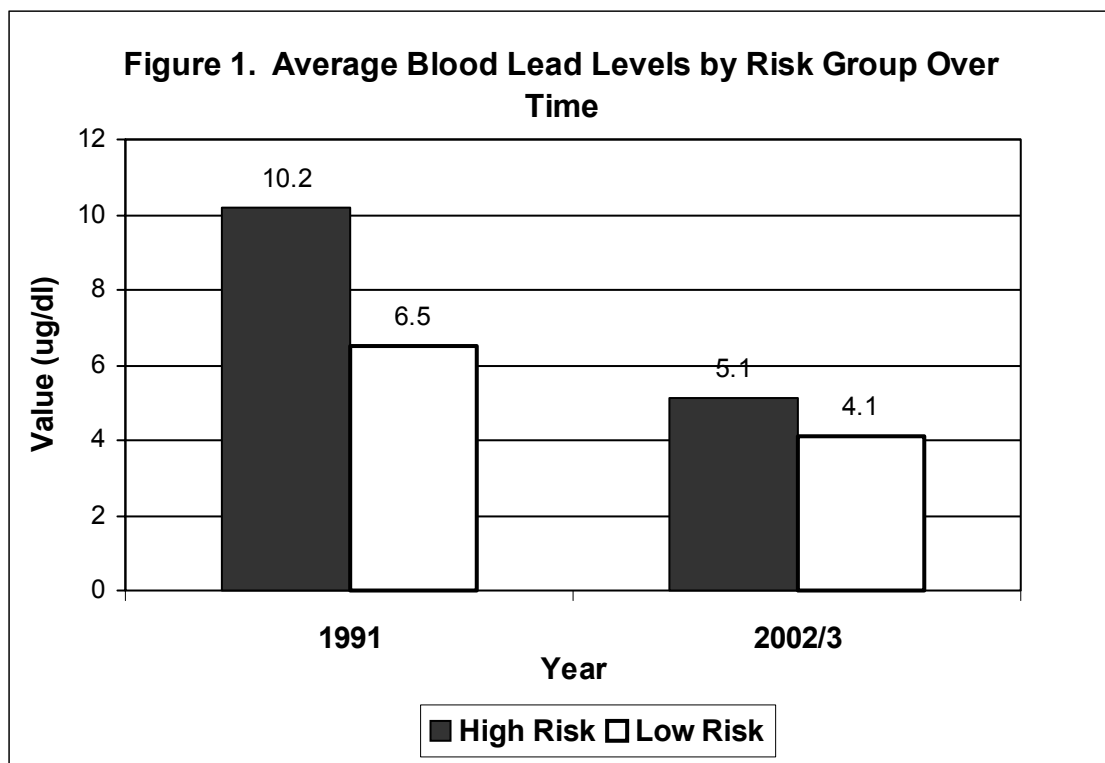
The high-risk group is defined as individuals that weld or are involved in paint removal or application. The low-risk group is defined as all other workers on the ship enrolled in the lead-monitoring program. Both high-risk and low-risk individuals receive a baseline BLL before ship overhaul operations begin, semi-annual BLLs thereafter, and a BLL upon completion of operations. In the past, the BLL values have been maintained at the Yard's Safety Office in a paper format. Since 1998, BLLs have been maintained electronically at the same location.

Results

In 1991, a total of 85 BLLs were recorded among the high-risk group, 50% of which were above the threshold level (range 2-24 $\mu\text{g}/\text{dl}$). In the low-risk group, 104 BLLs were recorded, with 18% above the threshold (range: 0-16 $\mu\text{g}/\text{dl}$). The high-risk group was four times more likely to be above the threshold compared to the low-risk group (Prevalence Rate Ratio (PRR) = 4.3, 95% CI = 2.3 - 8.4).

In the 2002/3 data, the high-risk group recorded a total of 101 BLLs, with an average value of 5.1 $\mu\text{g}/\text{dl}$ and a range of 3 - 17 $\mu\text{g}/\text{dl}$. Six (6%) of these were above the threshold. The low-risk group had a total of 33 recorded BLLs, 1 (3%) of which was above the threshold (average = 4.1 $\mu\text{g}/\text{dl}$; range = 3.0 - 15 $\mu\text{g}/\text{dl}$). There was no significant difference in threshold levels between high-risk and low-risk groups during this time period (PRR = 1.12, 95% CI = 0.82 - 1.55).

Figure 1 shows the average BLLs by risk group over time. Comparing the 1991 to 2002/3 BLLs in the high-risk group revealed a two-fold reduction in the average BLL (PRR = 8.3, 95% CI 3.7 - 18.6) over time. The 1991 to 2002 low-risk group comparison revealed a 1.6 fold reduction in the



average BLL (PRR = 6.2, 95% CI 0.86 – 44.7). In addition, the gap between the high-risk and low-risk group through time appears to be diminishing.

Conclusion

Blood lead levels decreased from 1991 to 2002/3 on the average for both high-risk and low-risk groups. The most dramatic reduction was seen in the high-risk group from 1991 through 2002/3. These changes may be due to many factors: the Coast Guard's decision to eliminate lead-based paint, the Yard's ongoing commitment to worker's safety and health, diligence in lead program management, engineering (vacuum tool usage) and work place modifications, employee education and commitment, and the proper use of air line respirators.

This study suggests that the USGC has exceeded the national Health People 2010 goal for all persons at risk of occupational lead exposure to have BLLs less than 25 ug/dL.³ Effective administration of an occupational lead program will ensure high occupational exposure risk employees remain below potentially harmful thresholds.

Acknowledgements

I would like to thank Frances Cohen, Industrial Hygienist at the Coast Guard Shipyard, for providing consultation and support. I would also like to thank Cara Olsen, at Uniformed Services University of the Health Sciences, for statistical assistance.

References

1. Yard, U.S.C.G., *Yard Procedure Manual 5100.1C*. 1995, U.S. Coast Guard Yard, Department of Transportation: Baltimore, MD.
2. Hall, Francis X. *Shipboard Exposures to Airborne Lead*, Naval Medical Surveillance Report (NMSR) .Vol 6 No 4, Oct – Dec, 2003, pgs 4 - 6, Navy Environmental Health Center, Portsmouth, VA.
3. HHS [2000]. Healthy people 2010-conference edition; National Health Promotion and Disease Objectives. Washington, DC: U.S. Department of Health and Human Services. Available on the internet at: www.health.gov/healthypeople/Document/default.htm.

Update: Cutaneous Leishmaniasis in U.S. Military Personnel - Southwest/Central Asia, 2002-2004

Editor's note: The following article is a reprint from the Center's for Disease Control and Prevention Morbidity and Mortality Weekly Report April 2, 2004, Vol 53, No 12. Of note, two cases of Visceral Leishmaniasis in soldiers have also been identified. For information on Leishmaniasis in the Navy and Marine Corps, including BUMED Medical SITREPs, refer to NEHC's Deployment Medical Surveillance Information webpage at <http://www-nehc.med.navy.mil/PREVMED/EPI/DEPSURV2.HTM>.

Cutaneous leishmaniasis (CL) is a sand fly-borne parasitic infection. Preliminary data about cases of CL in military personnel deployed to three countries (Afghanistan, Iraq, and Kuwait) in Southwest/Central Asia have been published previously.¹ During August 2002-February 2004, Department of Defense (DoD) staff identified 522 parasitologically confirmed cases of CL in military personnel. *Leishmania major* was the etiologic agent for all 176 cases for which species data, obtained by isoenzyme electrophoresis of cultured parasites, are available. This update focuses on the 361 cases (69% of 522) in patients whose demographic data were collected systematically under treatment protocols for therapy with the pentavalent antimonial compound sodium stibogluconate (Pentostam[®]; GlaxoSmithKline, United Kingdom) at Walter Reed Army Medical Center, District of Columbia.¹ U.S. health-care providers should consider CL in persons with persistent skin lesions who were deployed to Southwest/Central Asia or who were in other areas where leishmaniasis is endemic.

Of the 361 patients with CL, 352 (98%) were male; 274 (76%) were non-Hispanic white, 54 (15%) were non-Hispanic black, and 25 (7%) were Hispanic. The median age was 25 years (range: 18-57 years). On the basis of the patients' deployment histories, all but four of the patients probably were infected in Iraq (Figure 1), notably in areas near the Iraq-Syria border (e.g., Tall Afar) and the Iraq-Iran border (e.g., Balad Ruz, Kanaquin, Mandali, and Tursaq). The patients represented multiple branches of the U.S. military, including the Active Force, Reserve, and

National Guard components of the Army, Air Force, and Marine Corps; the majority of the patients were in the Active Force component of the Army. Self-reported dates of onset of skin lesions ranged from May 2002 to January 2004, with 274 (78% of 350) occurring during August-November 2003, including 169 (48% of 350) during September - October (Figure 1).

DoD is implementing measures to decrease the risk for CL among U.S. military personnel in Southwest/Central Asia and to expedite detection and treatment of cases of CL. The measures include 1) improving living conditions for deployed personnel; 2) heightening awareness that leishmaniasis is endemic in this region (e.g., through publicity about cases of CL in U.S. military personnel and pre- and post-deployment briefings about leishmaniasis); 3) emphasizing the importance of deployed personnel using personal protective measures (e.g., using permethrin-treated clothing and bed nets or other barriers to sand flies, minimizing the amount of exposed skin, and applying insect repellent containing 30%-35% DEET to exposed skin, especially from dusk through dawn); and 4) enhancing vector-control activities.

Persons deployed previously to Southwest/Central Asia who have questions about their general health or leishmaniasis may contact DoD's Deployment Health Clinical Center, telephone 866-559-1627 or at <http://www.pdhealth.mil>. For evaluation, treatment, and referral of military health-care beneficiaries with suspected or confirmed cases of leishmaniasis, clinicians should contact the Infectious Disease Service of either Walter Reed Army Medical Center (District of Columbia), telephone 202-782-1663/8691, or Brooke Army Medical Center (San Antonio, Texas), telephone 210-916-5554/1286. Diagnostic support can be obtained by contacting the director of the leishmaniasis diagnostic laboratory at Walter Reed Army Institute of Research (Silver Spring, Maryland), telephone 301-319-9956.

Reported by: *N Aronson, MD, Uniformed Svcs Univ of the Health Sciences, Bethesda; M Ananthakrishnan, MD, W Bernstein, MD, L Hochberg, M Marovich, MD, C Ockenhouse, MD, I Yoon, MD, P Weina, MD, Walter Reed Army Institute of Research, Silver Spring, Maryland. P Benson, MD, J Fischer, MD, D Hack, MD, C Hawkes, MD, M Polhemus, MD, G Wortmann, MD, Walter Reed Army Medical Center; P McEvoy, MD, R Neafie, MA, Armed Forces Institute of Pathology, District of Columbia. R Defraites, MD, Office of the Surgeon General of the Army, Alexandria, Virginia. BL Herwaldt, MD, Div of Parasitic Diseases, National Center for Infectious Diseases, CDC.*

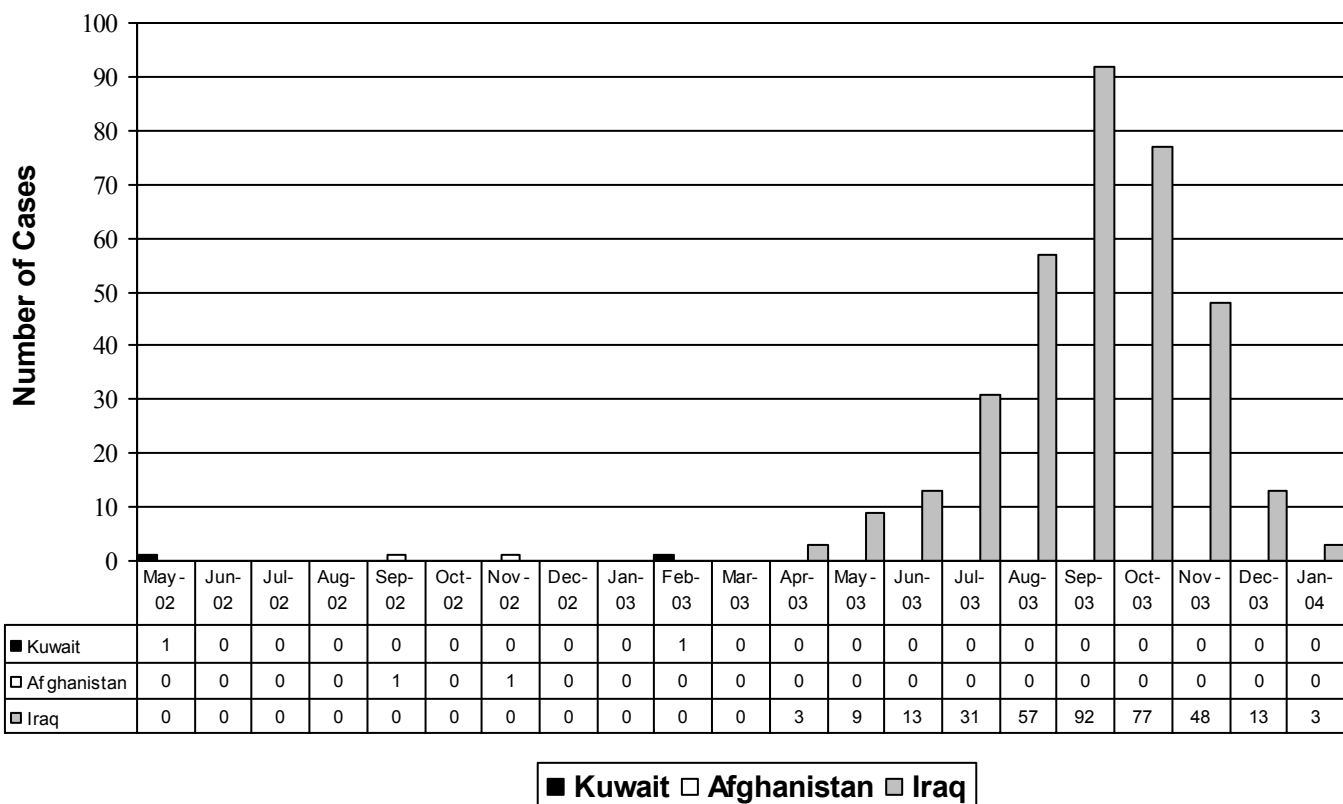
Acknowledgments

This report is based in part on data provided by L Figuero, E Fleming, MS, J Mendez, J Tally, Walter Reed Army Institute of Research, Silver Spring, Maryland, and staff of the Infectious Disease Svc, Walter Reed Army Medical Center, District of Columbia.

Reference

1. CDC. Cutaneous leishmaniasis in U.S. military personnel-Southwest/Central Asia, 2002-2003. *MMWR* 2003;52:1009-12.

FIGURE 1. Military-related cases of cutaneous leishmaniasis in Southwest/Central Asia 2002-4 *



* Figure 1 has been replaced with a more informative figure, courtesy of Col Naomi Aronson, director of the Leishmaniasis Treatment Center at WRAMC.

2003 Reportable Medical Event Trends, Navy and Marine Corps

Wendi Suesz, MPH, Navy Environmental Health Center, Portsmouth, VA

One of the objectives of the Naval Disease Reporting System (NDRS), per BUMEDINST 6220.12A, is to "systematically tabulate and analyze medical event reports (MERs) to examine Navy and Marine Corps trends and demographic parameters important in the epidemiology of reportable medical events." Following is an analysis of data from NDRS for calendar year (CY) 2003. For the purpose of this analysis, subgroups of active duty (AD) and beneficiaries were used, where the term beneficiary includes all non-active duty recipients of care including dependents and retirees. Denominators for estimating rates for AD can be found on the Department of Defense Washington Headquarters' Service website <http://www.dior.whs.mil/mmid/military/miltop.htm>.

There were 5167 MERs received for CY2003. Figure 1 shows total reports, by month, received in NDRS. Of these, 39% were for active duty Navy and 27% were for active duty Marine Corps. Twenty-five percent were Navy and Marine Corps beneficiaries. The remainder of the reports was for other services, civilians, contractors, etc.

There were 100 total reported cases of vector borne disease in 2003. Figure 2 shows the trend of vector borne disease by month. The peak in September represents an outbreak of malaria among Marines deployed to Liberia. Eighty confirmed and suspect cases of malaria falciparum are reflected in this count (36 confirmed). In this analysis, vector borne diseases include mosquito and tick borne viral encephalitis, filariasis, any mosquito or tick borne hemorrhagic fever, leishmaniasis, Lyme disease, malaria, plague, Rocky Mountain spotted fever, trypanosomiasis, tularemia, typhus, yellow fever, and hantavirus.

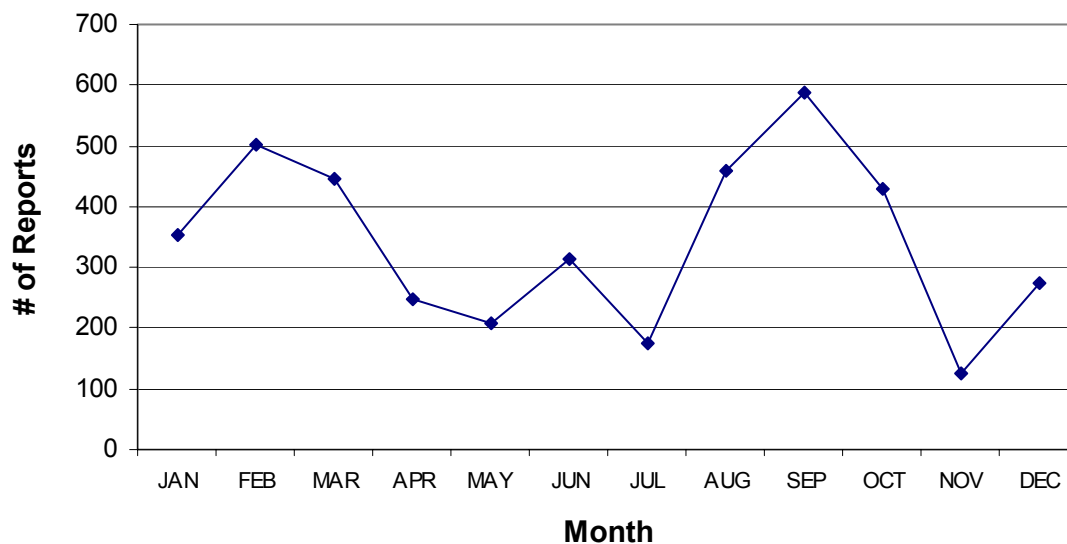
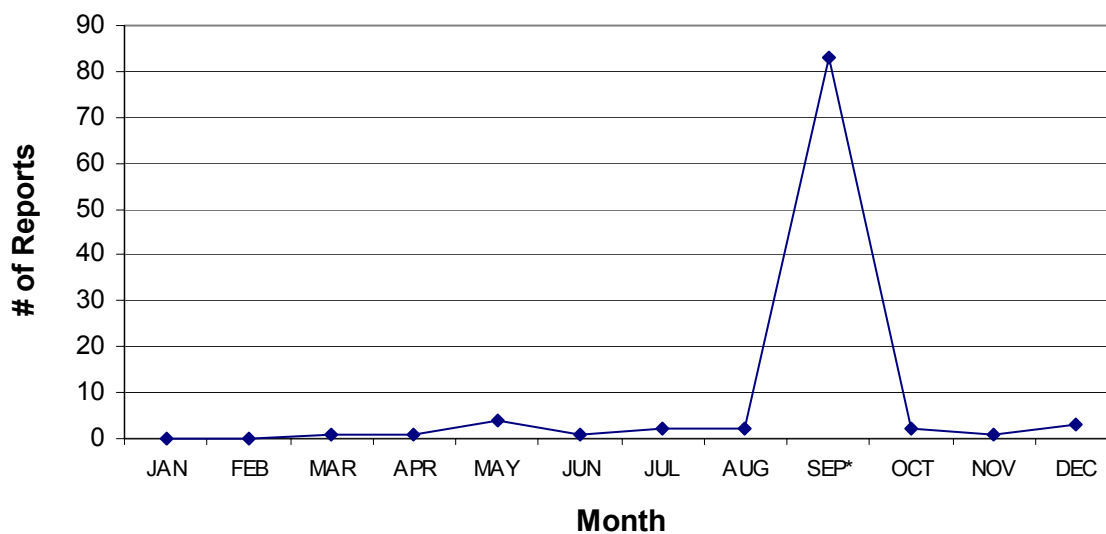
Figure 3 shows the monthly reports of food and water borne illnesses for both beneficiaries and

active duty individuals. There were 44 total reported cases among AD and 114 reported cases among beneficiaries. The peak in June is comprised mainly of shigellosis. In September, the active duty peak was giardiasis, while the beneficiary peak was salmonellosis. Although these numbers are relatively small, recent studies suggest that gastroenteritis and Norwalk-like viruses cause significant morbidity among our operational forces, both sailors and marines. It is believed that these illnesses and associated outbreaks are grossly underreported in NDRS. Food and water borne illnesses include salmonellosis, shigellosis, other food poisoning, giardiasis, E. coli 0157:H7, other E. coli, cholera, botulism, amebiasis, campylobacteriosis, cryptosporidiosis, cyclosporiasis, trichinosis, hepatitis A, and listeriosis.

Figure 4 presents the trend of monthly reports from Naval aircraft carriers; there were 200 MERs for CY 2003. The peak in March reflects 18 vaccine adverse event reports after the mass smallpox vaccination on board a ship. The remaining reports during that peak time were for STDs.

Figure 5 shows the monthly reports for the Marine Corps, both active duty and beneficiaries. There were 1068 total MERs among AD Marine Corps and 326 MERs among the beneficiaries.

Analyzing and providing feedback regarding NDRS is an essential part of the prevention process both to understand the scope of the health problems we face and to continue to improve the reporting system. The information presented here is intended to provide a context in which to interpret surveillance data and to provide further information on the epidemiology of selected diseases and populations.

Figure 1. Medical Event Reports in NDRS 2003**Figure 2. NDRS Monthly Reports of Vector Borne Disease, Active Duty 2003**

* This peak reflects outbreak of malaria with 80 lab confirmed or outbreak linked cases.

Figure 3. NDRS Monthly Reports of Food Borne & Water Borne Illnesses, 2003

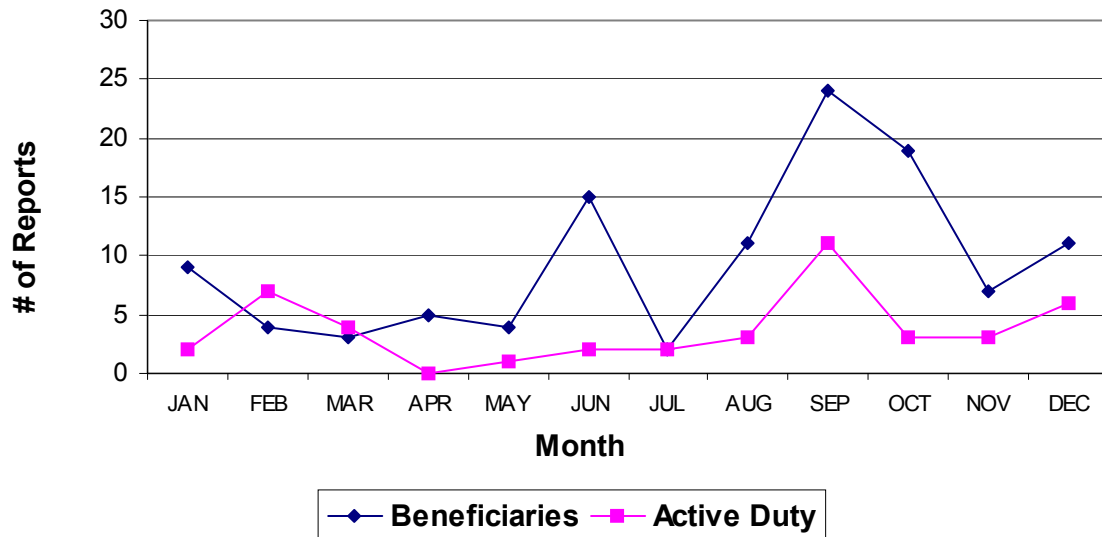
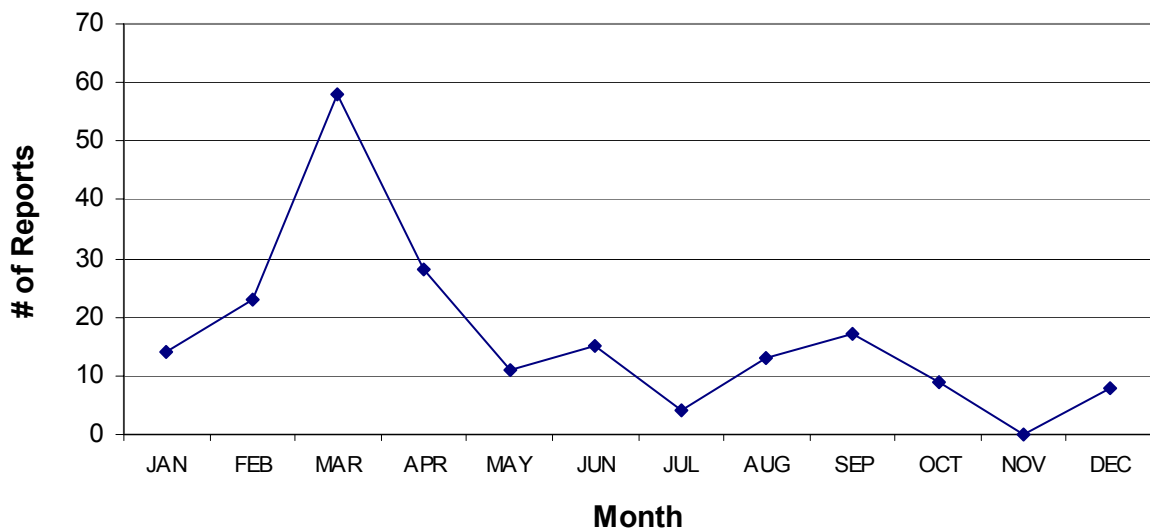
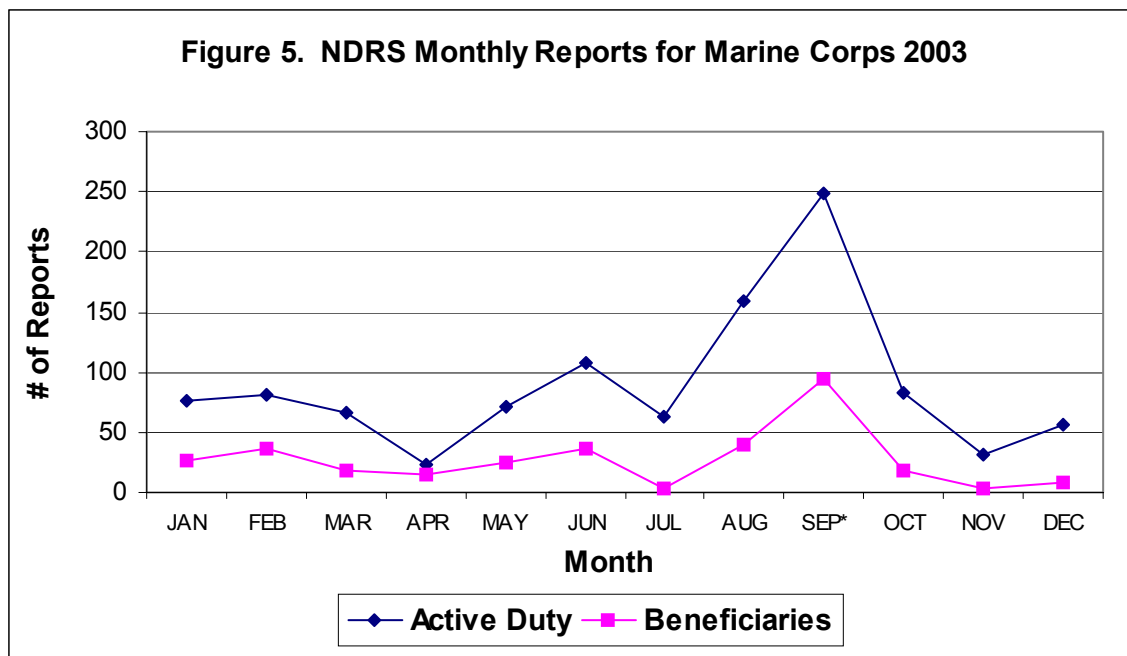


Figure 4. NDRS Monthly Reports for Carriers, 2003





* This peak among Active Duty reflects an outbreak of malaria with 80 lab confirmed or outbreak linked cases.

Tobacco Cessation Efforts In The Navy, 2003 Report

Mark A. D. Long, Ed.D. & Lynn Wiederhold, B.S.
Navy Environmental Health Center, Portsmouth, VA

Tobacco use remains an ongoing problem in the Department of Navy as recent surveys indicated that Sailors and Marines smoke cigarettes and cigars, and dip, chew and spit at higher rates than the civilian population.^{1,2} Health Promotion programs address the specific tobacco issues and needs of their respective populations by providing various prevention, education, intervention and treatment services for nicotine addiction and dependence.

All health promotion programs are requested to submit six-month tobacco program metrics to the Navy Environmental Health Center. This report reviews the tobacco process and outcome measures, from January 2003 to June 2003, for twenty-two Naval Hospitals, three Medical Centers, fifteen Medical Clinics, and two Dental Commands.

Health Promotion Efforts

Prevention & Early Intervention: Awareness and educational activities are critical components of a prevention and early intervention tobacco program. Three hundred seventy two (372) educational and awareness activities and briefs were given during this time period to military and beneficiary groups.

Facilitator Training: The Health Promotion staff are usually the primary treatment providers/facilitators for nicotine dependence programs. They recruit and train additional military and civilian personnel to facilitate tobacco cessation groups and classes. One hundred sixty five (165) new facilitators were trained during this six-month period.

Group Treatment: Naval Military Treatment Facilities (MTFs) provide nicotine addiction group treatment. The treatment consists of group education, counseling, and medications to address the psychological, behavioral, and physiological aspects of nicotine dependence. Six hundred seventy-three (673) treatment groups were provided at the clinic or hospital, at work-sites, and in the community for those who wanted to quit smoking and dipping.

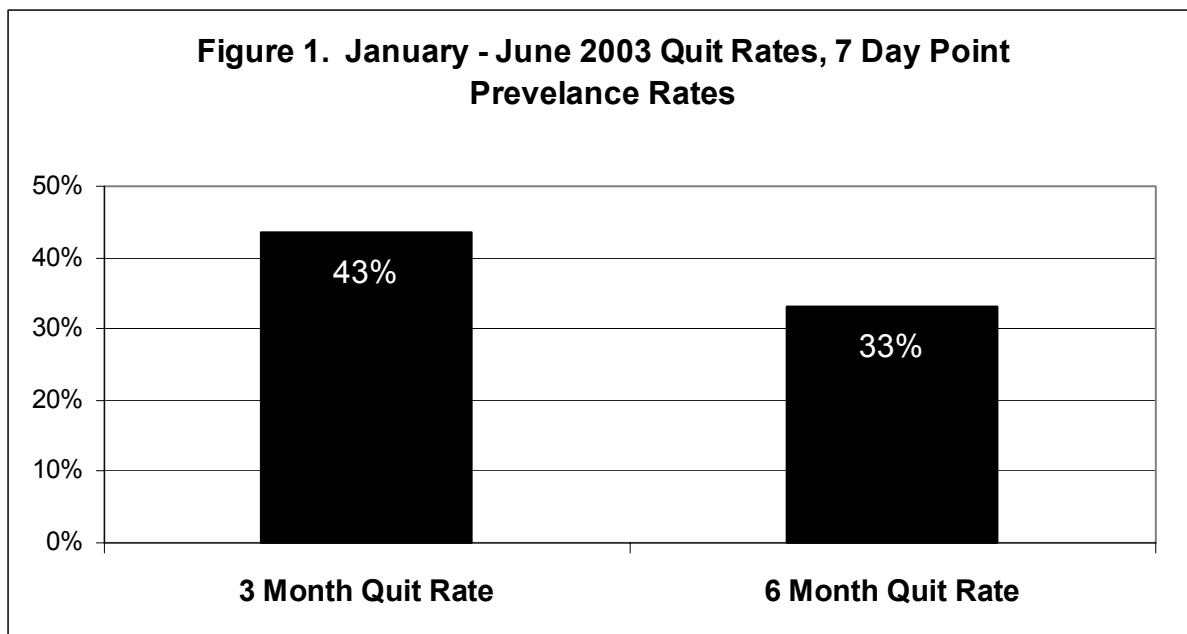
Quit Rates

Health Promotion programs indicated that 1823 persons had ended their tobacco use by the end of the formal treatment program. This is believed to be an underestimate of the true numbers as not all programs collected or disclosed this data.

In order to evaluate long-term effectiveness in behavior change, seven-day prevalence rates at three months and six months are measured. Programs cited several difficulties in reporting this metric including: difficulties locating mobile service members and families, time factors, and lack of understanding the metric. Quit rate met-

rics are reported in Figure 1. It is important to note that these rates do not reflect one cohort of individuals; rather, they reflect programs' quit rates at one point in time for all applicable treatment groups. 1365 individuals were followed-up for three month quit rate evaluation and 3001 individuals were followed-up for six month quit rate evaluation.

Figures 2 and 3 show quit rates by service and geography. Service is defined as the base's branch of military service on which the Health Promotions office is located. Overall, Navy Tobacco programs reported higher quit rates than Marine programs both three and six months post treatment. In addition, results suggest that the overseas tobacco programs had much higher success rates than those offered within the states. This is especially true at the three month time period. Of note, is the rather high reported relapse rates between 3 and 6 months for those treated overseas. This could be due to inaccurately reported quit rates. Investigating possible factors that may help with understanding this data is recommended. The tobacco literature does indicate that relapse continues over time.



NAVAL DISEASE REPORTING SYSTEM (NDRS)**Summary of 2004 Data**

Tables 1 and 2 display the Medical Event Reports (MERs) received at Navy Environmental

Health Center (NEHC). Interested readers may calculate rates among Active Duty by dividing the

Table 1. ACTIVE DUTY Reportable Medical Events, Navy & Marine Corps, Case Frequencies, 01 Jan – 31 Mar 2004

Disease	Total	USN	USMC	Disease	Total	USN	USMC
Amebiasis*	0	0	0	Lyme Disease	2	0	2
Anthrax*	0	0	0	Malaria (specify type) *	5	4	1
Biological warfare agent exposure	0	0	0	Measles*	0	0	0
Bites, rabies vaccine & human rabies IG	8	6	2	Meningitis (aseptic, viral)	2	1	1
Bites, venomous animal	0	0	0	Meningitis (bacterial other than Meningococcus)	0	0	0
Botulism*	0	0	0	Meningococcal disease*	0	0	0
Brucellosis	0	0	0	Mumps	0	0	0
Campylobacteriosis*	3	2	1	Occupational exposure to blood borne pathogens	0	0	0
Carbon Monoxide poisoning*	0	0	0	Onchocerciasis	0	0	0
Chemical warfare agent exposure	0	0	0	Pertussis*	0	0	0
Chlamydia	448	282	166	Plague*	0	0	0
Cholera	0	0	0	Pneumococcal pneumonia	0	0	0
Coccidioidomycosis	2	2	0	Poliomyelitis*	0	0	0
Cold injuries	0	0	0	Psittacosis (Ornithosis)	0	0	0
Cryptosporidiosis*	0	0	0	Q Fever*	0	0	0
Cyclospora*	0	0	0	Rabies, clinical human*	0	0	0
Dengue fever*	0	0	0	Relapsing fever	0	0	0
Diphtheria	0	0	0	Rheumatic fever	0	0	0
E. Coli 0157:H7 infection*	0	0	0	Rift Valley fever	0	0	0
Ehrlichiosis	1	0	1	Rocky-Mountain Spotted Fever	0	0	0
Encephalitis*	0	0	0	Rubella*	0	0	0
Filariasis	0	0	0	Salmonellosis*	1	1	0
Giardiasis	2	0	2	Schistosomiasis	0	0	0
Gonorrhea	70	52	18	Shigellosis*	0	0	0
Haemophilus influenza, type b	0	0	0	Smallpox*	0	0	0
Hantavirus infection*	0	0	0	Streptococcal disease, Group A	3	2	1
Heat injuries	3	0	3	Syphilis	8	5	3
Hemorrhagic fever*	0	0	0	Tetanus	0	0	0
Hepatitis, A (acute, symptomatic only)	1	1	0	Toxic shock syndrome	0	0	0
Hepatitis, B (acute, symptomatic only)	0	0	0	Trichinosis	0	0	0
Hepatitis, C (acute, symptomatic only)	2	1	1	Trypanosomiasis	0	0	0
Influenza (confirmed)	0	0	0	Tuberculosis, pulmonary active*	2	1	1
Lead poisoning	0	0	0	Tularemia*	0	0	0
Legionellosis*	0	0	0	Typhoid fever*	0	0	0
Leishmaniasis	4	3	1	Typhus*	0	0	0
Leprosy (Hansen's disease)	0	0	0	Urethritis (non gonococcal)	13	4	9
Leptospirosis*	0	0	0	Varicella	1	0	1
Listeriosis	0	0	0	Yellow fever	0	0	0

* Reportable with 24 hours

Data in the NMSR are provisional, based on reports and other sources of data available to the Navy Environmental Health Center. MERs are classified by date of report. Only cases submitted as confirmed are included.

frequencies by estimated mid-year strength of 382, 699 for USN and 174,385 for USMC. Table

1 shows Active Duty only. Table 2 shows non-Active Duty Beneficiaries.

Table 2. BENEFICIARIES Reportable Medical Events, Navy & Marine Corps, Case Frequencies, 01 Jan – 31 Mar 2004								
Disease	Total	USN	USMC	Disease	Total	USN	USMC	
Amebiasis*	0	0	0	Lyme Disease	0	0	0	
Anthrax*	0	0	0	Malaria (specify type) *	0	0	0	
Biological warfare agent exposure	0	0	0	Measles*	0	0	0	
Bites, rabies vaccine & human rabies IG	16	3	13	Meningitis (aseptic, viral)	2	2	0	
Bites, venomous animal	0	0	0	Meningitis (bacterial other than Meningococcus)	2	2	0	
Botulism*	0	0	0	Meningococcal disease*	0	0	0	
Brucellosis	0	0	0	Mumps	0	0	0	
Campylobacteriosis*	0	0	0	Occupational exposure to blood borne pathogens	0	0	0	
Carbon Monoxide poisoning*	0	0	0	Onchocerciasis	0	0	0	
Chemical warfare agent exposure	0	0	0	Pertussis*	0	0	0	
Chlamydia	95	76	19	Plague*	0	0	0	
Cholera	0	0	0	Pneumococcal pneumonia	0	0	0	
Coccidioidomycosis	0	0	0	Polioyielitis*	0	0	0	
Cold injuries	0	0	0	Psittacosis (Ornithosis)	0	0	0	
Cryptosporidiosis*	0	0	0	Q Fever*	0	0	0	
Cyclospora*	0	0	0	Rabies, clinical human*	0	0	0	
Dengue fever*	0	0	0	Relapsing fever	0	0	0	
Diphtheria	0	0	0	Rift Valley fever	0	0	0	
E. Coli 0157:H7 infection*	0	0	0	Rocky-Mountain Spotted Fever	0	0	0	
Ehrlichiosis	0	0	0	Rubella*	0	0	0	
Encephalitis*	0	0	0	Salmonellosis*	6	3	3	
Filariasis	0	0	0	Schistosomiasis	0	0	0	
Giardiasis	0	0	0	Shigellosis*	2	1	1	
Gonorrhea	9	6	3	Smallpox*	0	0	0	
Haemophilus influenza, type b	1	1	0	Streptococcal disease, Group A	5	3	2	
Hantavirus infection*	0	0	0	Syphilis	3	3	0	
Heat injuries	0	0	0	Tetanus	0	0	0	
Hemorrhagic fever*	0	0	0	Toxic shock syndrome	0	0	0	
Hepatitis, A (acute, symptomatic only)	0	0	0	Trichinosis	0	0	0	
Hepatitis, B (acute, symptomatic only)	0	0	0	Trypanosomiasis	0	0	0	
Hepatitis, C (acute, symptomatic only)	0	0	0	Tuberculosis, pulmonary active*	4	4	0	
Influenza (confirmed)	4	3	1	Tularemia*	0	0	0	
Lead poisoning	0	0	0	Typhoid fever*	0	0	0	
Legionellosis*	0	0	0	Typhus*	0	0	0	
Leishmaniasis	0	0	0	Urethritis (non gonococcal)	0	0	0	
Leprosy (Hansen's disease)	0	0	0	Yellow fever*	0	0	0	
Leptospirosis*	0	0	0					
Listeriosis	0	0	0					

* Reportable within 24 hours

(Continued from page 11)

Figure 2. January - June 2003 Quit Rates, 7 Day Point Prevalence Rates by Service

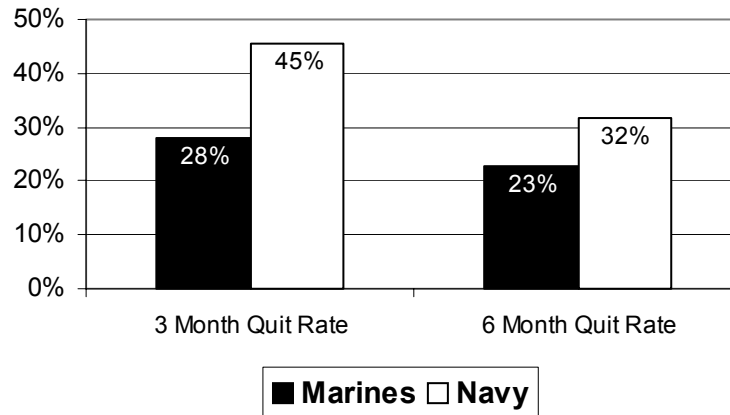
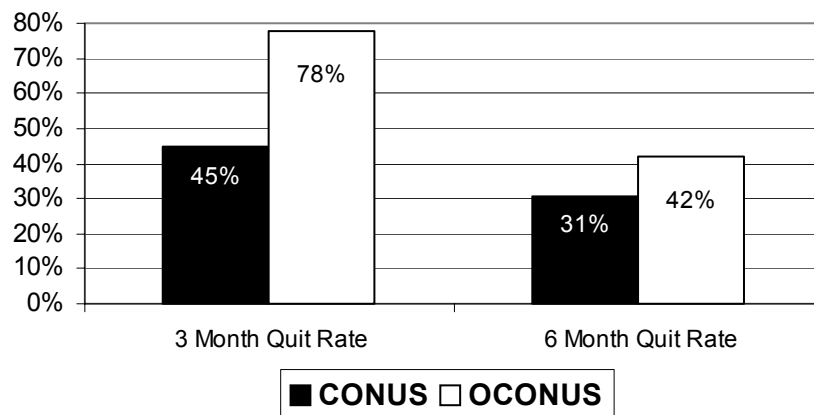


Figure 3. January - June 2003 Quit Rates, 7 Day Point Prevalence, by Geography



Medication Costs

The costs of pharmacotherapy were reported by most of the Health Promotion programs with the assistance of the Pharmacy department. Among reporting programs, the total costs of medications (Nicotine replacement therapy-patches, gum, inhaler, and Zyban/Wellbutrin) used for treatment were \$450,785.

Tobacco Program Highlights

- Tobacco programming is offered and provided at almost all fixed Naval MTF's
- The majority of Health Promotion programs collect, maintain, and report tobacco outcome and process measures
- Treatment for nicotine dependence (counseling and medications) is available to all beneficiaries
- This data suggests that group interventions seem to be effective in treating nicotine addiction
- Numerous MTF programs are providing training of new tobacco facilitators

Data Limitations

- Tracking and collecting tobacco program metrics across all Health Promotion programs is not consistent. A few sites are not collecting and reporting tobacco program metrics to NEHC.
- The frequent moves by military and civilian personnel, the high operational status and OIF, staff turnover and perhaps an incomplete understanding of the value and need for program evaluation all or in part combined, result in difficulties for specific MTF and DTF programs to collect and report on metrics.
- The medical clinics that fall under larger hospital commands are experiencing some difficulties with collecting and reporting tobacco metrics.

Recommendations

For all the reasons cited above, results should be interpreted cautiously as significant differences in reporting practices by reporting unit do exist. As with any public health report, this

should be used as a valuable supplement to other information when making decisions.

Evaluation of the Navy Tobacco programs on an ongoing basis at all levels is recommended in order to strengthen the programs and ensure reliable data. Compliance by local Health Promotion programs in collecting, reporting, reviewing and analyzing their process and outcome tobacco metrics is highly recommended.

Acknowledgements

Thanks to Asha Riegodedios for editorial review.

References

1. Bray and Associates (1999, 2003). 1998 Department of Defense survey of health related behaviors among military personnel (RTI/7034/006-FR). <http://www.tricare.osd.mil/analysis/surveys/98survey/survey6.html>
2. 2002 Department of Defense survey of health related behaviors among military personnel (RTI/7841/006-FR). Research Triangle Park, NC: Research Triangle Institute. <http://www.tricare.osd.mil/main/news/art0514.html>.

Navy and Marine Corps Post Deployment Health Assessments: Trending of The First Fifteen Months

CDR Robert Martschinske, MC, USNR(FS), Army Medical Surveillance Activity, Washington DC
CAPT Bruce K Bohnker, MC, USN(FS), Navy Environmental Health Center, Portsmouth VA

The Deployment Health Assessment Program is an important component of Force Health Protection, and was implemented across the Navy and Marine Corps.^{1,2,3} The program includes pre-deployment health assessment using the DD Form 2795 (May 1999) and post-deployment health assessment using the DD Form 2796 (Apr 2003). Those forms as well as other deployment health information are available at the Navy Environmental Health Center (NEHC) website: <http://www-nehc.med.navy.mil/postdep/dodforms.htm>. NEHC has responsibility for Deployment Health Surveillance guidance as part of its duties supporting Public Health in Navy Medicine.

The post deployment health assessment (PDHA) forms are completed by the service member and reviewed by a health care provider. The form is submitted to the Army Medical Surveillance Activity ([HTTP://AMSA.ARMY.MIL](http://AMSA.ARMY.MIL)), (ATTN: Deployment Surveillance), 6900 Georgia Avenue, N.W., Bldg T-20, Room 213, Washington, DC 20307-5001, where the information is entered into a database. This paper will provide an initial descriptive analysis of the health interview questions from all PDHA forms received for the first 15 months of the current program implementation. This analysis would include forms submitted by Navy and Marine forces returning from Bosnia, Afghanistan and Iraq.

Figure 1 presents the number of PDHA forms entered into the database by quarter, and shows a bulge of forms submitted by Navy and Marine Corps personnel returning in April-Jun 2003. Figure 2 presents the rate per thousand personnel reporting general health of "fair" or "poor". Figure 3 presents the rate of personnel reporting development of medical or dental problems during the deployment. Figure 4 presents the rate of personnel with health concerns. Figure 5 presents the rate of personnel with mental health concerns. Figure 6 presents the rate of personnel with concerns about exposures. Figure 7 presents the rate of personnel who were referred for further medical or dental evaluation.

These graphs form a baseline for ongoing trending and analysis. The analysis of this information has several limitations. Most of the information is self-reported and open to significant variation. The analysis does not separate deployment locations, age or gender considerations which probably warrant future analysis. Ongoing trending and analysis is an important part of Force Health Protection for our personnel.

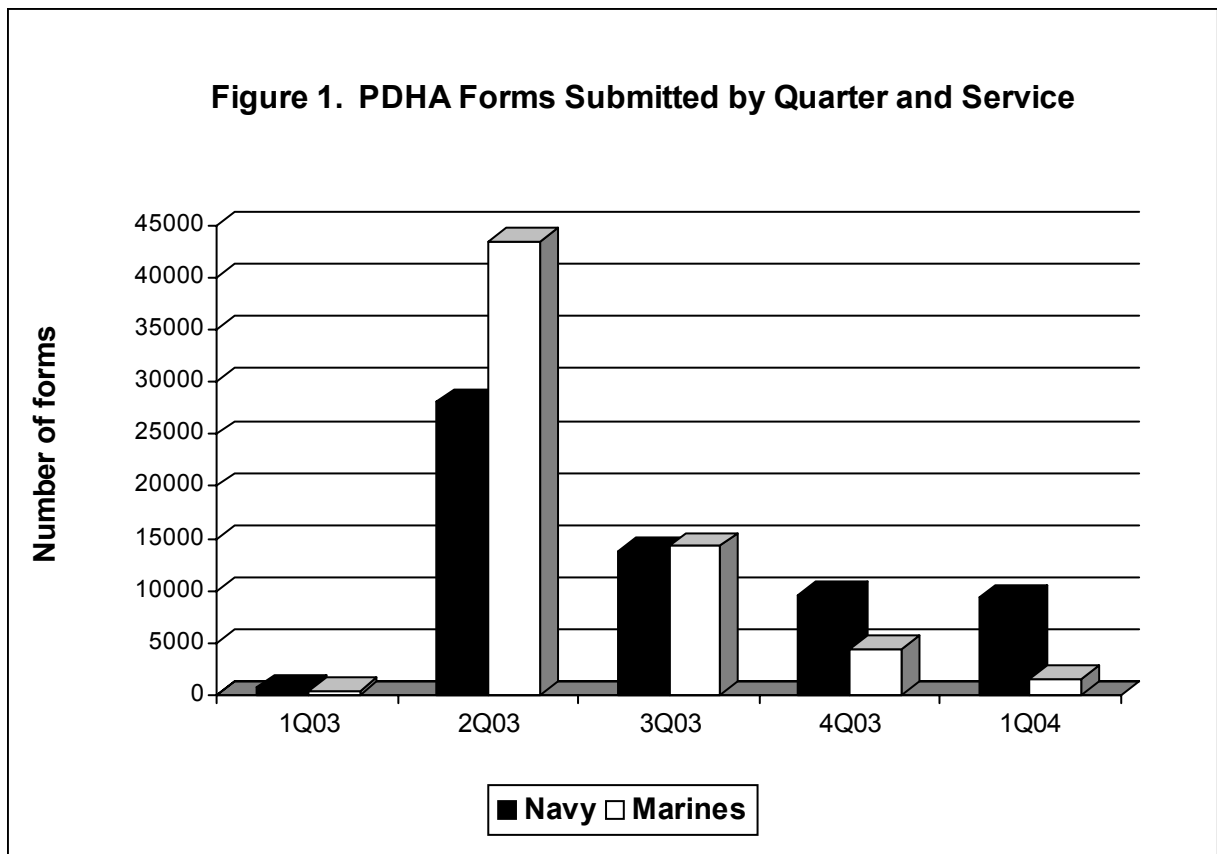


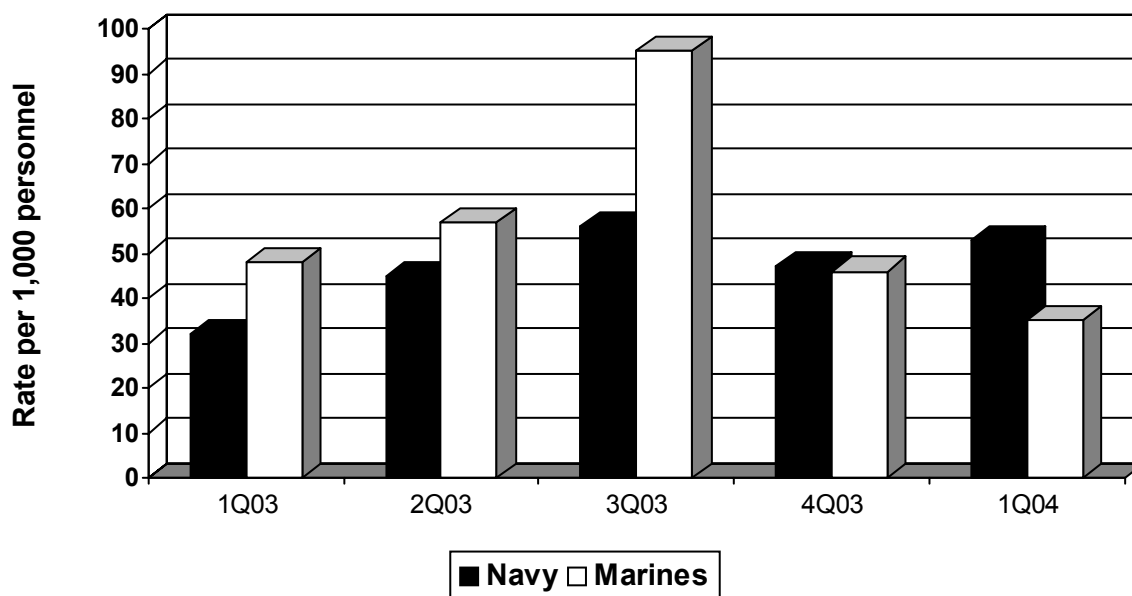
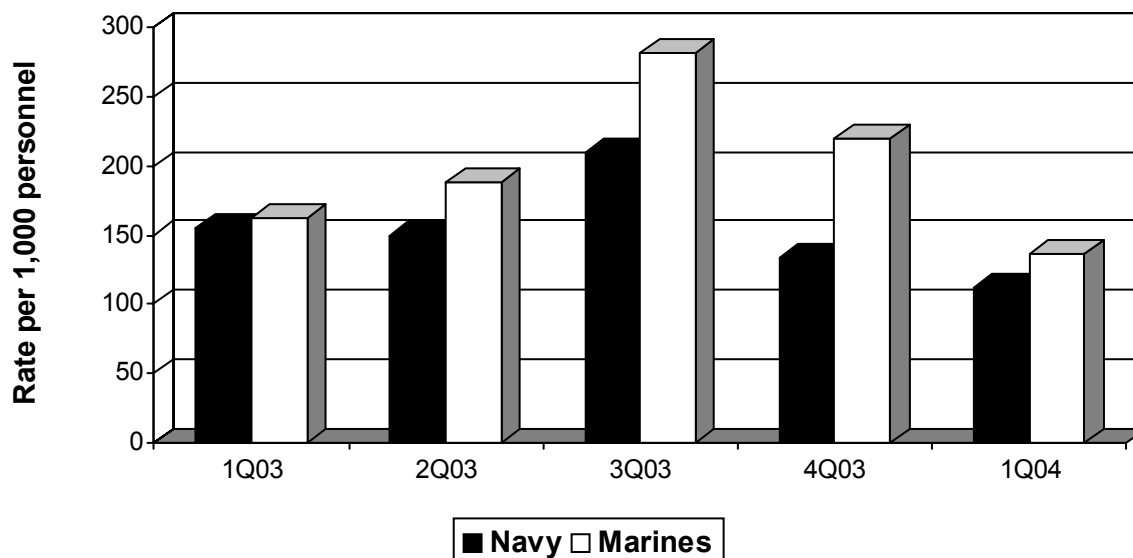
Figure 2. Rate for "Fair" or "Poor" Health**Figure 3. Rate for Medical or Dental Problems**

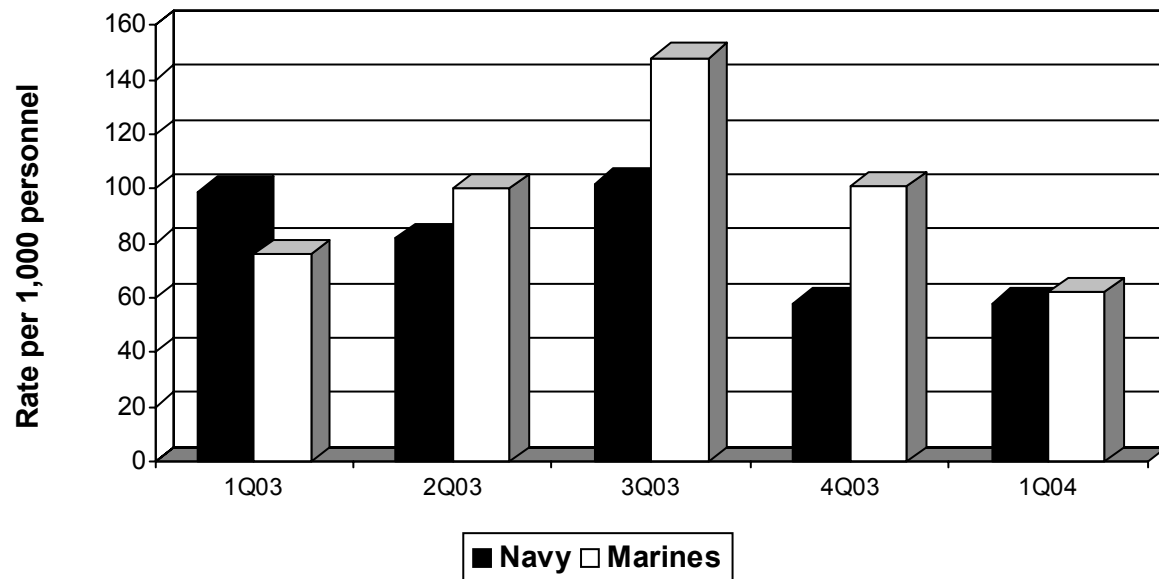
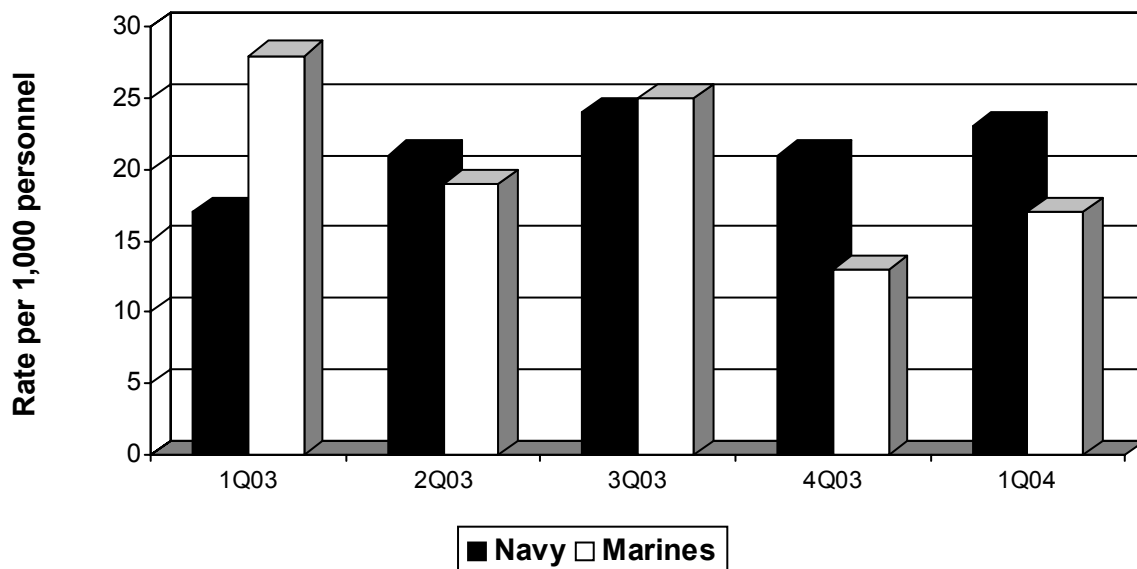
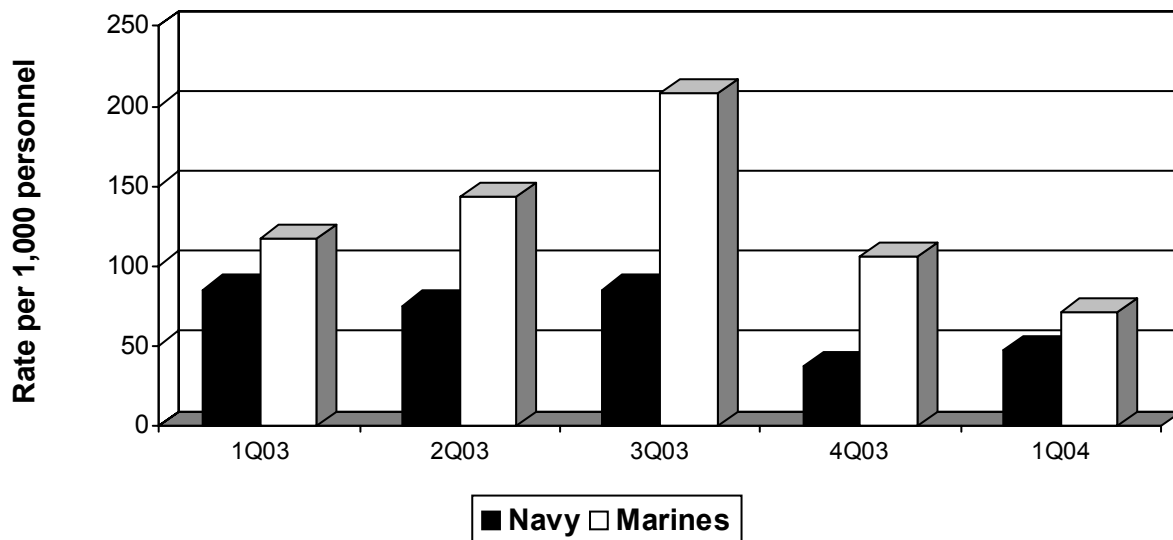
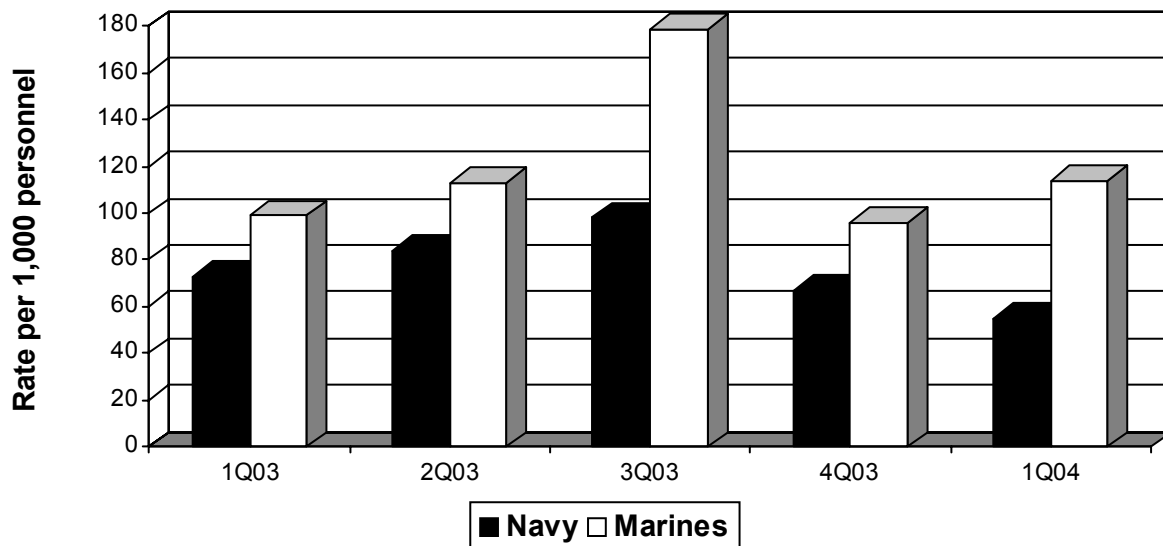
Figure 4. Rate for Reporting Health Concerns**Figure 5. Rate for Reporting Mental Health Concerns**

Figure 6. Rate for Reporting Concerns about Exposures**Figure 7. Rate for Referral Indicated for Medical or Dental Care****References**

1. DODI 6490.3, Implementation and Application of Joint Medical Surveillance for Deployments, 07 Aug 1997.

2. CNO WASHINGTON DC MSG 291515Z MAY 03 (NAVADMIN 143/03).

3. CMC WASHINGTON DC MSG 11750Z MAY 03 (all are available on the NEHC Deployment website: <http://www-nehc.med.navy.mil/postdep/dodforms.htm>).

Ambulatory Injuries for US Marine Corps Enlisted Personnel (CY 1998-2002)

Debra Collier, MPH, Navy Environmental Health Center, Portsmouth, VA

Introduction

Navy and Marine Corps personnel are exposed to intensive training events that increase their risk of injuries. Several studies have been conducted concerning the impact of injuries among Marine recruits. Almeida *et al* (1999), conducted a study identifying rates of musculoskeletal injuries among male Marine recruits at Marine Corps Recruit Depot (MCRD) San Diego, to examine the pattern of physical training associated with certain injuries.¹ Findings indicated that weekly injury rates were significantly correlated with hours of intensive training, with overall injury rates of 39.6%.¹ In 1992, Linenger and West conducted a study at the sports medicine clinic of MCRD San Diego reporting the incidence of musculoskeletal/soft tissue injury among recruits as 19.9 cases per 100 recruit-months.² These studies have identified that the issue of injuries among our recruits and mid-grade personnel should be addressed further. This report summarizes frequencies, rates, and trends of injury for outpatient visits due to injuries among US Marine Corps recruit, and mid-grade personnel.

Methods

Standard Ambulatory Data Records (SADR) maintained by Defense Medical Surveillance System (DMSS) were searched to identify all ambulatory visits for Marine Corps enlisted personnel, E1-E9, between 1997 and 2002, with primary or secondary diagnoses of musculoskeletal disorders (ICD-9-CM codes 710-739) and injuries and poisonings (ICD-9-CM codes 800-999). Cases were categorized as incident or follow-up. An incident case was defined as an individual's first injury diagnosis during the study period or a visit at least 6 months after a prior initial visit. Visits with the same ICD-9-code that occurred within 6

months of an initial visit were considered follow-ups. The final dataset for this analysis only included initial visits with a primary diagnosis of musculoskeletal disorders or injuries and poisonings. Population estimates for rate calculations were retrieved from the DMED remote access system.³ Rate calculations indicate injury visits per person-years.

Results

During 1997 to 2002, there were 1,268,884 ambulatory visits due to musculoskeletal disorders and injuries and poisonings as the primary or secondary diagnosis for the Marine Corps enlisted community. This consisted of 646,471 (50.9%) initial visits among 59,021 persons. The final dataset, including only primary diagnoses of injuries (ICD-9-CM coded-710.00-739.00 or 800.00-999.00) resulting in 597,298 records among 56,545 USMC members.

Table 1 presents the top 10 injuries for ambulatory visits. The top 10 injuries account for 36.2% of all primary diagnoses included in this analysis. Musculoskeletal disorders (710.00-739.00 ICD-9-CM), account for over half (52.3%, N=164751) of the ambulatory visits. Top ten injury distribution was similar for males and females.

The injury ambulatory visit rate was 778.3 per 1000 person-years. Unexpectedly, rates of injury increased by 24.9% across the five years (Figure 1). While females comprise 10.9% of injury ambulatory visits, the rate of injury visit for females was approximately twice as high than that of males. Rates declined with increasing age for both males and females (Figure 2). Figure 3 shows that rates among race categories varied by gender with white females exhibiting the highest rate of injury. Rates among the female junior enlisted population (E1-E4) were twice that of the female senior enlisted population (E5-E9) (Figure 4).

Table 1. Top 10 Injuries from Ambulatory Visits

ICD-9-CM codes	Number	%
719.4-Pain in joint	47649	8.0
845.0-Fracture of the Ankle	36403	6.1
848.9-Unspecified site of sprain & strain	23663	4.0
729.5-Pain in Limb	22492	3.8
844.9-Sprain of unspecified site of knee & leg	21001	3.5
724.2-Lumbago	18667	3.1
724.5-Backache, unspecified	16498	2.8
717.7-Chondromalacia of patella	10338	1.7
726.6-Enthesopathy of knee	10277	1.7
847.2-Lumbar sprain	9442	1.6

Figure 1. Annual Rate of Ambulatory Visits by Gender, CY 1998-2002

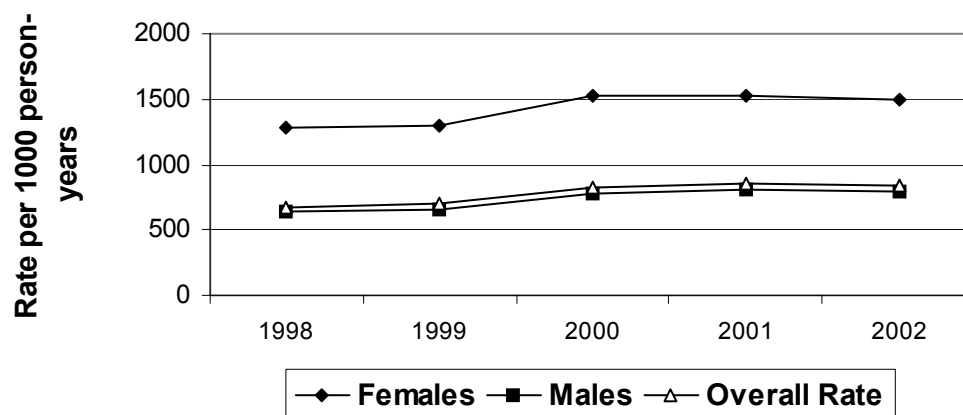


Figure 2. Ambulatory Injury Visits by Age Category and Gender

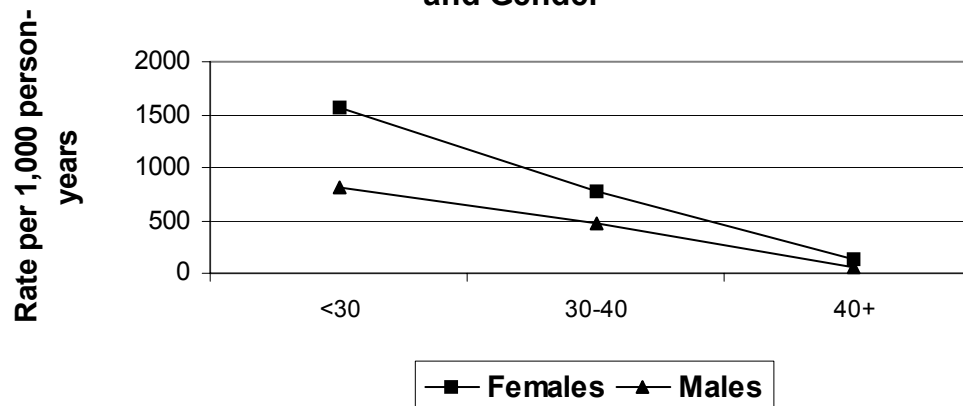


Figure 3. Ambulatory Injury Visit by Race and Gender, CY 1998-2002

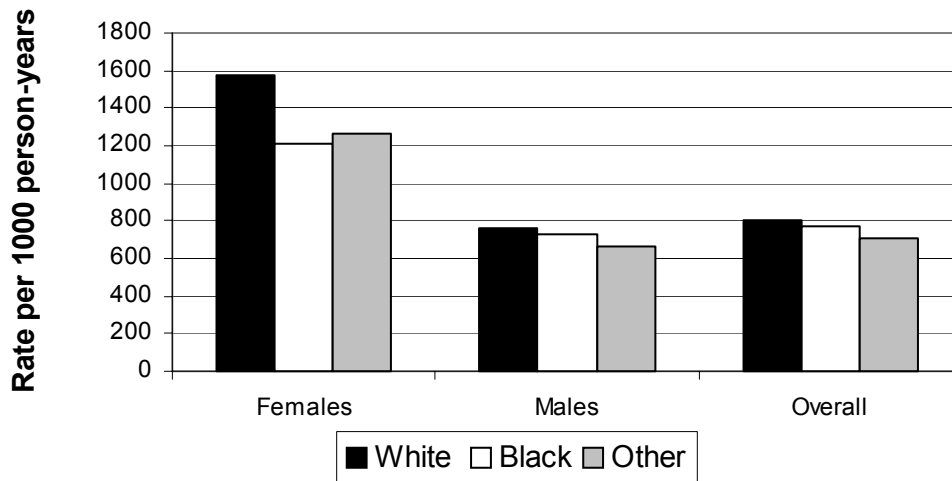
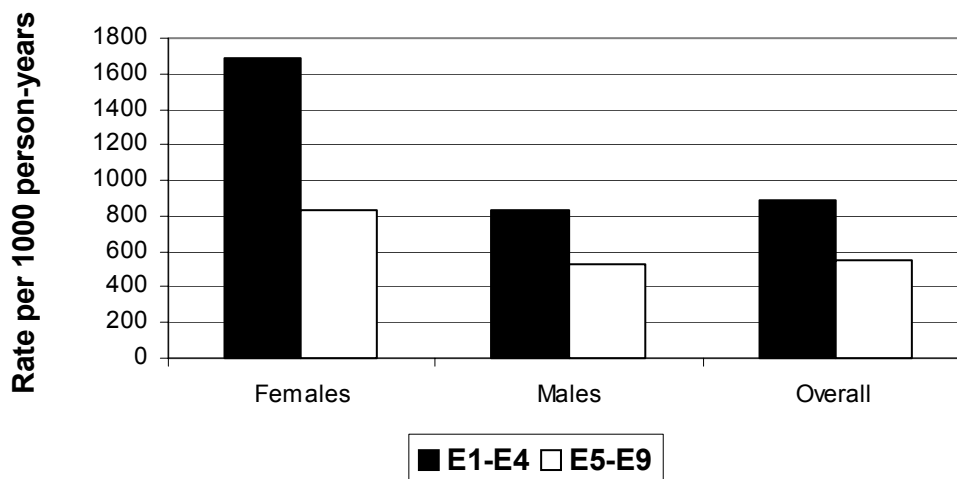


Figure 4. Ambulatory Injury Visit by Paygrade and Gender, CY 1998-2002



Conclusion

Injuries contribute to a significant amount of morbidity and mortality across the military services. In particular, females have an alarmingly high rate of injuries as compared to males in the Marine Corps. Various data sources should be monitored to assess injury prevention programs for populations at risk.

References

1. Almeida SA, Williams KM, Shaffer RA, Brodine SK (August 1999). Epidemiological Patterns of Muscu-

loskeletal Injuries and Physical Training. *Medicine and Science of Sports Exercise*, Volume 31 Number 8, 1176-1182.

2. Linenger, J and West LA, (September 1992). Epidemiology of Soft-Tissue/Musculoskeletal Injury among US Marine Recruits Undergoing Basic Training. *Military Medicine*, Volume 157 Number 9, 491-493.

3. Defense Medical Epidemiology Database April 2003 available at http://amsa.army.mil/AMSA/amsa_home.htm. Retrieved 17 March 2004.

Vaccine Adverse Event Reporting System (VAERS) Update

Table 1 displays the total Anthrax VAERS reports submitted by each service to the Army Medical Surveillance Activity through 26 Mar 2004 in support of the Anthrax Vaccine Immunization Program. Reactions are classified per DoD Memorandum 15 October 1999, Policy for Reporting Adverse Events Associated with the Anthrax Vac-

cine. Table 2 displays all VAERS reports, by vaccine type, submitted to NEHC through 26 Mar 2004. Reactions are classified using adverse event guidelines of the Centers for Disease Control and Prevention. Table 1 includes active duty personnel only while Table 2 includes Navy and Marine Corps active duty and beneficiaries.

Table 1. Anthrax Vaccine Immunization Program VAERS Cumulative Data by Service, Active Duty Members (28 Aug 1998 - 26 Mar 2004)

Service	Classification				Cum. Totals
	Local Reaction			Systemic Reaction	
	Mild	Moderate	Severe		
USA	28	33	14	81	156
USN	9	20	11	69	109
USAF	37	79	55	405	576
USMC	1	13	3	20	37
USCG	0	1	0	0	1

Table 2. Navy and Marine Corps VAERS Cumulative Data by Vaccine Type, Active Duty and Beneficiaries (01 Dec 2002 - 26 Mar 2004)

Vaccination/Event	Classification		Cum. Totals
	Serious*	Non-Serious*	
Anthrax	1	41	42
Smallpox	9	95	104
Anthrax + Smallpox	3	9	12
Other	1	21	22
Cum. Totals	14	166	180

* CDC defines serious adverse events as death, life-threatening illness, hospitalization or prolongation of hospitalization, or permanent disability. A non-serious adverse event then includes any other adverse event reported (<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5201a1.htm>)

DEPARTMENT OF THE NAVY

Commanding Officer

Navy Environmental Health Center

620 John Paul Jones Circle Suite 1100

Portsmouth, VA 23708-2103

Official Business